

Problem 4.2 Dividing a Fraction by a Whole Number

Use written explanations or diagrams to show your reasoning for each part. Write a number sentence showing your calculation(s).

- A.** Ms. Li brings peanuts to be shared equally by members of groups winning each game. How much of a pound of peanuts will each student get in the given situations?

1. Four students share $\frac{1}{2}$ pound of peanuts.
2. Three students share $\frac{1}{4}$ pound of peanuts.
3. Two students share $\frac{1}{5}$ pound of peanuts.



- B.** A popcorn store donates its different-sized boxes of popcorn for use as prizes at a team competition. How much popcorn does each team member get in the given situations?

1. A two-person team shares a $\frac{3}{4}$ -pound box of popcorn equally.
2. A four-person team shares a $\frac{7}{8}$ -pound box of popcorn equally.
3. A four-person team shares a $1\frac{1}{2}$ -pound box of popcorn equally.
(Remember $1\frac{1}{2} = \frac{3}{2}$.)

- C.** Find each quotient and explain which model you used.

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|-------------------------|-------------------------|
| 1. $\frac{1}{2} \div 4$ | 2. $\frac{3}{2} \div 2$ |
| 3. $\frac{2}{5} \div 3$ | 4. $\frac{4}{5} \div 4$ |

- D.** What algorithm makes sense for dividing any fraction by any whole number?

- E.** Write a story problem that can be solved by $\frac{8}{3} \div 4$. Explain why the calculation matches the story.

ACE Homework starts on page 55.